AMENDMENTS TO THE CLAIMS

1-28. (Previously Cancelled)

29-54. (Presently Cancelled)

55. (New) A process for the hydrometallurgical processing of manganese containing materials, the process characterised by:

combining a manganese dioxide containing feedstock having less than 40% Mn with an acidic solution to form a leach solution; and

leaching the leach solution by passing a volume of sulphur dioxide gas as the leaching agent through said leach solution to produce a manganese compound,

while maintaining the level of dithionate ion generated in the leach solution at less than about 5g/l by maintaining an excess of manganese dioxide in the leach solution and maintaining the oxidation reduction potential of the leach solution at a level of at least about 550 mV (vs Ag/AgCl reference electrode).

56. (New) A process according to claim 55, wherein the level of dithionate ion generated in the leach solution is maintained at less than about 1g/l.

57. (New) A process according to claim 55, wherein the pH of the leach solution is maintained at less than about 1.5.

58. (New) A process according to claim 55, wherein the leach solution comprises a slurry of manganese dioxide containing material at a slurry density of less than about 10%w/v, less than about 120g/l manganese sulphate, a temperature of greater than about 95°C, and at a pH of less than about 1.5.

59. (New) A process according to claim 55, wherein the leach solution contains levels of soluble iron and the initial soluble iron concentration is greater than 4g/l.

60. (New) A process according to claim 59, wherein the iron is in the form of ferric sulphate (Fe2(SO4)3).

61. (New) A process according to claim 55, wherein the leach solution contains levels of soluble iron and the ferrous concentration is maintained at a level below about 0.5g/l by the excess of manganese dioxide.

62. (New) A process according to claim 61, wherein the ratio of ferric to ferrous is monitored at least at intervals throughout the leach.

63. (New) A process according to claim 55, wherein the sulphur dioxide gas is passed through the leach solution over a period of at least 10 hours, whereby up to about 95% of manganese dioxide is dissolved.

64. (New) A process according to claim 55, wherein the leach is conducted over a period of between about 10 to about 15 hours.

65. (New) A process according to claim 55, wherein the reaction is halted once a stoichiometric amount of sulphur dioxide has been added to the leach solution so as to achieve a 95% dissolution of the manganese dioxide present.

66. (New) A process for the production of electrolytic manganese dioxide, the process characterised by:

a leach of a manganese dioxide containing feedstock having less than 40% Mn, in which a volume of sulphur dioxide gas as the leaching agent is passed through said feedstock combined with an acidic solution, the dithionate ion levels in the resulting leach solution being maintained at less than about 5g/l by maintaining an excess of manganese dioxide in the leach solution and maintaining the oxidation reduction potential of the leach solution at a level of at least about 550 mV (vs Ag/AgCl reference electrode); and

processing the resulting leach solution to provide an appropriate electrolyte that

is passed to an electrowinning stage during which electrolytic manganese dioxide is deposited.

67. (New) A process according to claim 66, wherein the levels of dithionate ion generated in the leach solution are less than about 1g/l.

68. (New) A process according to claim 66, wherein the pH of the leach solution is maintained at less than about 1.5.

69. (New) A process according to claim 66, wherein the leach solution comprises a slurry of manganese dioxide containing material at a slurry density of less than about 10%w/v, less than about 120g/l manganese sulphate, a temperature of greater than about 95°C, and at a pH of less than about 1.5.

70. (New) A process according to claim 66, wherein the leach solution contains levels of soluble iron and the initial soluble iron concentration is greater than 4g/l.

71. (New) A process according to claim 70, wherein the iron is in the form of ferric sulphate (Fe2(SO4)3).

72. (New) A process according to claim 66, wherein the leach solution contains

levels of soluble iron and the ferrous concentration is maintained at a level below about 0.5g/l by the excess of manganese dioxide.

73. (New) A process according to claim 72, wherein the ratio of ferric to ferrous is monitored at least at intervals throughout the leach.

74. (New) A process according to claim 66, wherein the sulphur dioxide gas is passed through the leach solution over a period of at least 10 hours, whereby up to about 95% of manganese dioxide is dissolved.

75. (New) A process according to claim 66, wherein the leach is conducted over a period of between about 10 to about 15 hours.

76. (New) A process according to claim 66, wherein the reaction is halted once a stoichiometric amount of sulphur dioxide has been added to the leach solution to achieve a 95% dissolution of the manganese dioxide present.

77. (New) A process according to claim 66, wherein the acidic solution used in the leach is comprised at least in part of returned or spent sulphuric acid solution from the electrowinning stage.

78. (New) A process according to claim 77, wherein additional acid is added to the leach to ensure that the pH remains at less than about 1.5.